

B&W 802

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B&W 802

Model 802 was conceived as a domestic system directly related to the great B&W 801 studio reference monitor. Where the new speaker differs is in its essentially more compact dimensions and significantly lower cost. So Model 802 — heir to so much technical excellence — brings superlative standards of performance into the home and therefore within the reach of a very much wider audience.

The no-compromise philosophy that guided the B&W design team in creating the world's most successful professional monitor* is here applied just as exactly to the creation of the Model 802 domestic monitor system.

***World's most successful monitor**

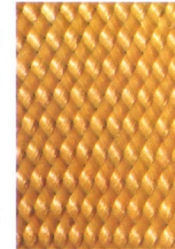
Every one of these famous labels from leading recording companies in Britain, Europe and USA has chosen the 802's sister speaker Model 801 as primary classical music monitor.



The Drivers

Model 802 employs four active drivers in its three-way system. All are computer-matched and paired after individual test.

The midrange and high-frequency drivers and their moulded head enclosure are identical to those so successfully developed for the 801. B&W's revolutionary material Fibrecrete is employed for the inner lining of the midrange head assembly.



The 100mm aromatic polyamide fibre matrix cone used in the midrange driver is critically formed and PVA-impregnated to a computer-linked pattern. Laser interferometry was the research tool used in arriving at this advanced technique. The performance of this midrange unit is characterised by exceptional accuracy, superb transient response and outstanding reliability.

The high-frequency driver, with its dome-shaped 26mm diaphragm of woven polyester filaments, is extremely linear and extends frequency response beyond audibility. Dispersion is excellent, distortion very low and the thermal power rating more than adequate.

The bass unit consists of two low-frequency drivers mounted vertically in-line, a rather revolutionary configuration but one that permits very compact dimensions. The 165mm cones are of pva-treated Bextrene and are rubber-mounted in a cast frame. This double unit gives the 802 a bass output of superb reference monitor quality, ingeniously adapted to the needs of the home environment.



The Crossover Network

The fourth order Butterworth crossover network, which employs no fewer than 46 components, is identical to that developed for the 801. It owes its sophistication to computer-aided design optimisation techniques perfected by B&W engineers.

As a result, Model 802 maintains exceptionally uniform sound pressure/frequency response, correct phase relationships, vertical polar response of enhanced symmetry, and desirable impedance characteristics.

Overload Protection

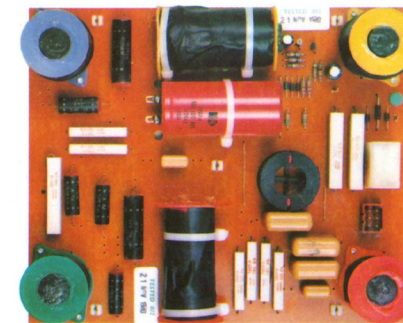
Model 802 is protected automatically against all forms of AC or DC overload. This is achieved by APOC — audio-powered overload circuit — a safety device pioneered and perfected by B&W.

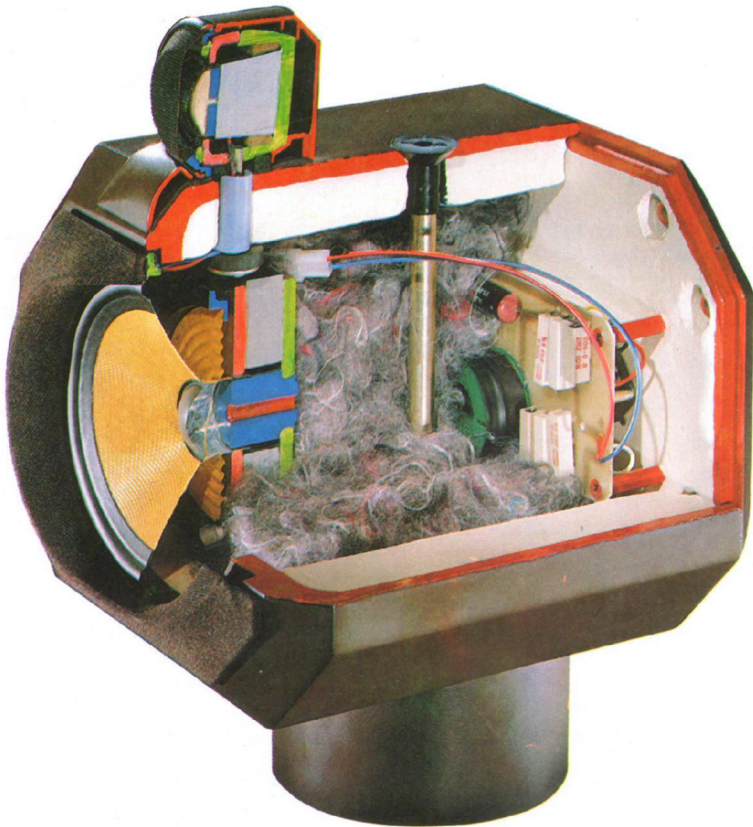


If and when the preset safety power level is exceeded, the drive units cut out and a visual indication is shown by the LED on the cabinet. As soon as the overload condition is removed, operation is automatically restored. Considering the high output levels obtainable with the 802, this protection against thermal damage to drivers is an invaluable safeguard.



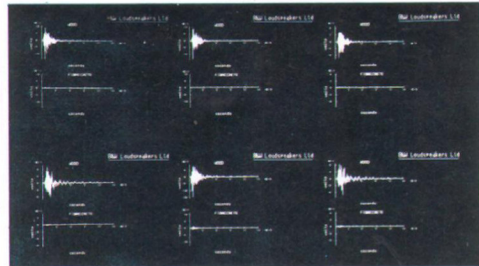
The creative work of the B&W design team benefits enormously from the support of this PDP 11/35 computer with its quite astonishing capacity to analyse and interpret the data of sound reproduction.





Fibrecrete

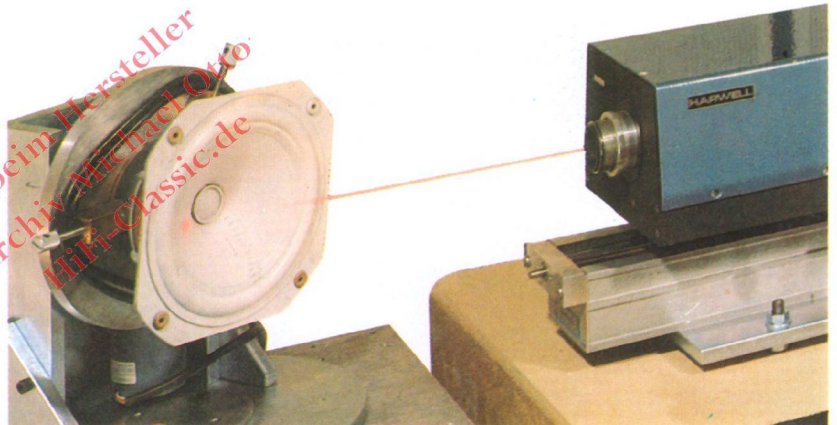
Glass-reinforced concrete is a new material developed by the B&W design team as a result of performance analysis by advanced computer techniques. This cut-away illustration shows the 802's moulded Fibrecrete midrange head assembly, which is virtually free from enclosure vibration.



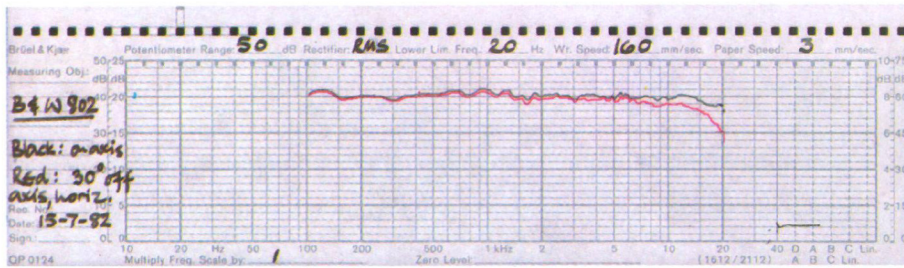
From 36 sample measurements taken at different surface points, these plots illustrate typical comparisons between the original 801 head unit and the new version incorporating Fibrecrete, as used in Model 802.

Laser Interferometry

The laser interferometer at B&W measures vibration precisely, without interrupting performance. Its phenomenal power is harnessed to speed development of new materials, profiles and assembly techniques. A notable example of the fruits of this advanced research technique is the midrange driver employed in Model 802.

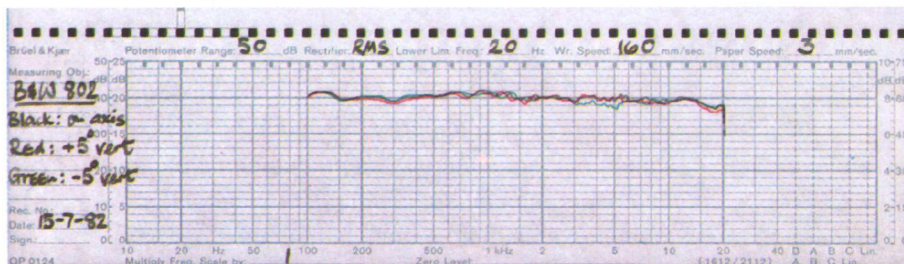


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Typical 802 free-field sinewave amplitude/frequency response curves

Black trace: on-axis.
Red trace: 30° off-axis horizontally.



Black trace: on-axis.
Red trace: +5° off-axis vertically up.
Green trace: -5° off-axis vertically down.

Each and every B&W 802 speaker comes with its own individual calibration certificate.

Enclosure Design

As befits a domestic system, Model 802 is – by reason of the unique bass driver configuration – very much slimmer than the 801 (644mm or 25½ inches less in girth). In fact, 802 occupies less than half the floorspace.

This slimline construction is aesthetically very pleasing as well as amenable to the 802's intended place in the home environment.

The functional appearance of the head assembly (which houses optimised enclosures for midrange and high-frequency drivers) contrasts pleasingly with the clean, simple lines of the lower cabinet. Its staggered in-line configuration provides wide horizontal dispersion and ensures corrected time-arrival. The whole assembly can be rotated relative to the low-frequency enclosure.

The materials and construction methods used in building the low-frequency enclosure were determined by careful research devoted to the reduction of vibration. High density particle board is used for the cabinet, with fine quality wood veneers outside and balancing veneers inside. Internal walls are heavily

braced for added rigidity and laminated against resonance with 6mm bituminous pads.

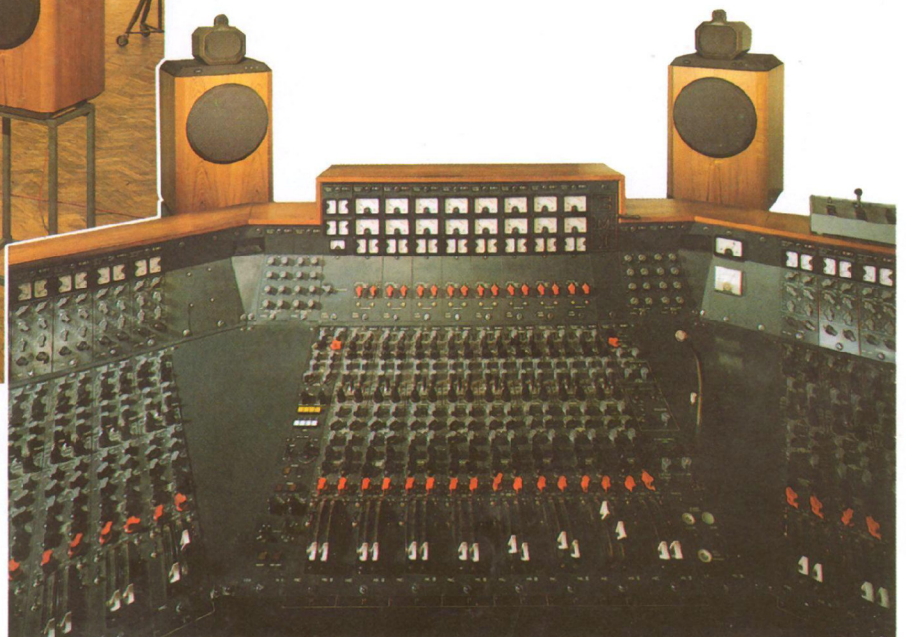
A layer of acoustic foam between the two enclosures minimises high-frequency reflections off the top of the main cabinet. Enclosure edges are contoured to avoid colouration of sound by diffraction.



In the celebrated EMI Abbey Road Studios, London: 801's on the studio floor and at the mixing desk.



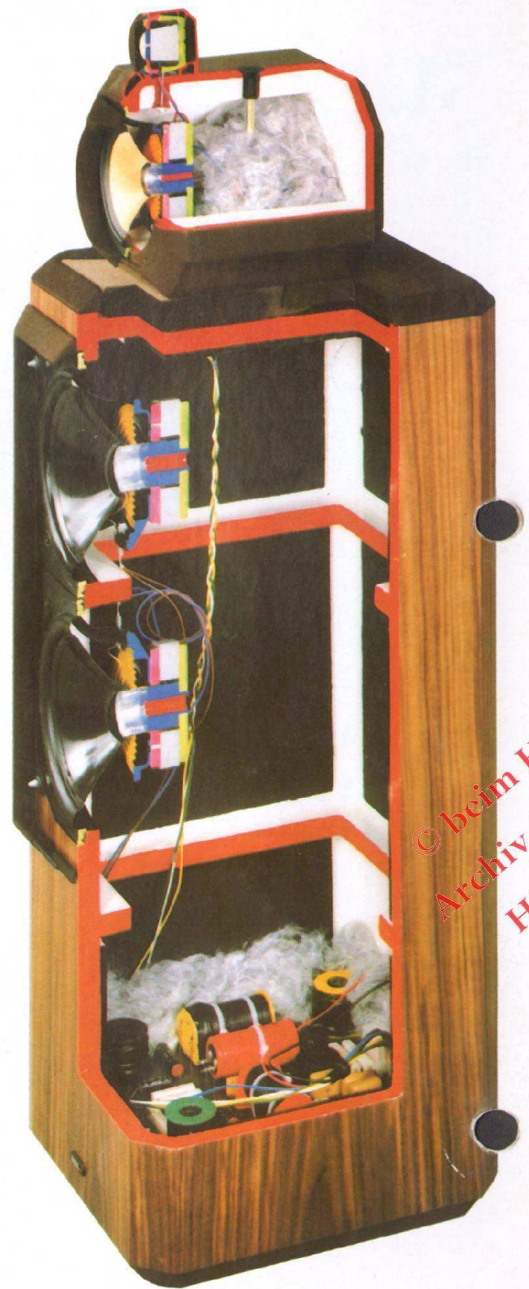
Optional Top Cover. Here Model 802 is seen with top cover in position over the midrange/high-frequency assembly. Performance is unaffected; whether to opt for it is entirely a matter of aesthetics – whether one prefers to see interesting functional shapes or clean, simple lines.



B&W 802

Specification

Frequency response	55Hz to 20kHz ± 2 dB at centre of the listening window at 2m.		
Low-frequency system	Closed box acoustic suspension with system resonance of 49Hz and system Q of 0.7 (ie: minus 3dB at resonant frequency).		
Dispersion	<i>Vertical:</i> ± 1 dB over 10° of centre window. <i>Horizontal:</i> +0, -3dB over 60° of centre window, 20Hz to 13kHz.		
Drive units	Vertical in-line configuration corrected for minimum inter-unit time delay. Computer-matched in pairs ensuring accuracy typically better than 0.25dB.		
Bass drivers (two)	<i>Diaphragm:</i> 165mm dia. thermo-plastic cone with PVA compound coating. Ultra long-throw suspension. <i>Voice Coil:</i> 38mm dia. high-temperature Nomex. <i>Magnet System:</i> 2.25kg, ceramic.		
Mid-range driver	<i>Diaphragm:</i> 100mm dia. aromatic polyamide fibre matrix cone, critically formed and PVA impregnated following a laser interferometry computer-linked pattern. <i>Voice Coil:</i> 25mm dia. phenolic-bonded and aluminium lined. <i>Magnet System:</i> Ceramic.		
High-frequency driver	<i>Diaphragm:</i> 26mm dia. multi-filament polyester weave dome, mechanically damped. <i>Voice Coil:</i> 26mm dia. high-temperature epoxy impregnated. <i>Magnet System:</i> high-energy nickel cobalt, centre pole. Total moving mass less than 0.3g.		
Distortion	For a nominal s.p.l. of 95dB at 1m.		
		20Hz-100Hz	100Hz-20kHz
	<i>Second harmonic:</i>	less than 3%	1%
	<i>Third harmonic:</i>	less than 3%	1%
Impedance	8 ohms nominal throughout entire operating range.		
Sensitivity	1 watt into 8 ohm load for a s.p.l. of 85dB at 1m, sinewave input at 300Hz.		
Power handling	Minimum amplifier 80 watts into 8 ohms. No upper limit because of overload protection device.		
Dimensions	<i>Height:</i> 1040mm (41 in). <i>Width:</i> 300mm (11¾ in). <i>Depth:</i> 370mm (14½ in). <i>Weight:</i> 32kg (70lb).		
Cabinet finish	<i>Standard:</i> selected veneers of teak or walnut. <i>Special:</i> selected veneers of rosewood or black ash.		



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B&W Loudspeakers Ltd reserve the right to amend details of their specifications in line with technical developments.



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